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#7
Response
J. Macmillan
1/15/03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named
Inventor : Baowei KANG et al. ✓
Appln. No. : 10/017,734 ✓
Filed : December 7, 2001 ✓
Title : POWER SEMICONDUCTOR SWITCHING
DEVICES WITH LOW POWER LOSS AND
METHOD FOR FABRICATING THE
SAME
Docket No. : B784.312-1

Group Art Unit: 2826
Examiner: M.L. Tran

RESPONSE

Box Non-Fee Amendment
Assistant Commissioner for Patents
Washington, D.C. 20231

SENT VIA EXPRESS MAIL

Express Mail No.: EV 168042531

Sir:

This is in response to the Office Action mailed on September 25, 2002.

IN THE CLAIMS

The presently pending claims 1-7 are provided for the Examiner's ease of reference as follows:

1. A low-power-loss power semiconductor switching device comprising an n-type base, a backside p⁺ emitter and general frontside structure including a cathode and a gate, wherein said switching device includes a combination of an ultra thin and lightly-doped backside p⁺ emitter formed by ion implanting and a nonuniformly doped n-type base which contains a residual layer of a priorly-diffused n⁺ layer on one side of the device.
2. The method as defined in claim 6 wherein the thickness of the backside p⁺ emitter is approximately between 0.2 and 1 μm.